# 03040202-06

***(Lake Swamp)***

## General Description

Watershed 03040202-06 (formerly 03040202-140, 03040202-150, 03040202-160, and 03040202-170) is located in Florence and Williamsburg Counties and consists primarily of ***Lake Swamp*** and its tributaries. The watershed occupies 105,066 acres of the Lower Coastal Plain region of South Carolina. Land use/land cover in the watershed includes: 40.8% agricultural land, 31.0% forested wetland, 16.7% forested land, 7.3% urban land, 3.8% scrub/shrub land, 0.2% nonforested wetland, and 0.1% water.

Twomile Branch (Cypress Branch, Sandy Run Branch, Spring Run) merges with Camp Branch near the City of Lake City to form the headwaters of Lake Swamp. Smith Swamp (Spring Bay, Grahams Mill Branch, Graham Branch) and McNamee Swamp join to form Singleton Swamp, which accepts drainage from Long Branch before draining into Lake Swamp. There are a total of 152.9 stream miles and 71.1 acres of lake waters in this watershed. Lake Swamp is classified FW* (Dissolved oxygen not less than 4.0 mg/l and pH between 5.0 and 8.5) and the remaining streams are classified FW.

## Surface Water Quality

| Station # | Type | Class | Description |
|---|---|---|---|
| PD-346 | W/INT | FW | CAMP BRANCH AT S-21-278 |
| PD-085 | S/W | FW* | LAKE SWAMP AT US 378 |
| PD-086A | S/INT | FW* | LAKE SWAMP ON SC 341 |
| RS-02318 | RS02 | FW* | LAKE SWAMP ON SC 341 |
| PD-314 | W/INT | FW | SINGLETON SWAMP AT S-21-67 |
| PD-087 | S/INT | FW* | LAKE SWAMP AT SC 341 2.6 MI W OF JOHNSONVILLE |

***Camp Branch (PD-346) -*** Aquatic life and recreational uses are fully supported. This is a blackwater system, characterized by naturally low pH and dissolved oxygen concentration conditions. Although pH and dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. A significant increasing trend in dissolved oxygen concentration suggests improving conditions for this parameter.

***Lake Swamp –*** There are three SCDHEC monitoring stations along Lake Swamp. This is a blackwater system, characterized by naturally low dissolved oxygen concentration conditions. At the upstream site ***(PD-085)***, aquatic life and recreational uses are fully supported, and significant decreasing trends in turbidity and fecal coliform bacteria concentration suggest improving conditions for these parameters. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Further downstream ***(PD-086A/RS-02318)***, aquatic life uses are not supported due to dissolved oxygen excursions. There is also a significant increasing trend in five-day biochemical oxygen demand. There is a significant decreasing trend in pH. Recreational uses are fully supported at this site. At the furthest downstream site ***(PD-087)***, aquatic life and recreational uses

are fully supported. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations.

***Singleton Swamp (PD-314) –*** Aquatic life and recreational uses are fully supported, and a significant decreasing trend in five-day biochemical oxygen demand suggests improving conditions for this parameter. This is a blackwater system, characterized by naturally pH and low dissolved oxygen concentration conditions. Although pH and dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations.

## Groundwater Quality

| Well # | Class | Aquifer | Location |
|---|---|---|---|
| AMB-007 | GB | BLACK CREEK | JOHNSONVILLE |

## NPDES Program

### *Active NPDES Facilities*

| *RECEIVING STREAM*<br>*FACILITY NAME*<br>*PERMITTED FLOW @ PIPE (MGD)* | *NPDES#*<br>*TYPE*<br>*COMMENT* |
|---|---|
| LONG BRANCH<br>NAN YA PLASTICS CORP. AMERICA<br>PIPE #: 001 FLOW: M/R | SCG250092<br>MIN0R INDUSTRIAL |

## Nonpoint Source Management Program

### *Land Disposal Activities*

**Landfill Facilities**

| *LANDFILL NAME*<br>*FACILITY TYPE* | *PERMIT #*<br>*STATUS* |
|---|---|
| CITY OF LAKE CITY DUMP<br>MUNICIPAL | ----------<br>CLOSED |
| CITY OF LAKE CITY C&D LANDFILL<br>C&D | 451002-1201<br>ACTIVE |
| CITY OF LAKE CITY LANDFILL<br>MUNICIPAL | 211002-1201<br>CLOSED |
| CITY OF LAKE CITY C&D LANDFILL<br>C&D | PROPOSED<br>---------- |

## Growth Potential

There is a low to moderate potential for growth in this watershed, which contains the Town of Scranton, and a portion of the City of Lake City and the Town of Johnsonville. Water and sewer services are limited to the urban areas of Lake City and Scranton. The sewer system in Scranton and the wastewater system in Lake City are currently undergoing an expansion. U.S. Hwy. 52, a four-lane highway, is the main corridor between the Cities of Florence and Charleston. This highway corridor contains the NanYa Industrial Complex and a surrounding

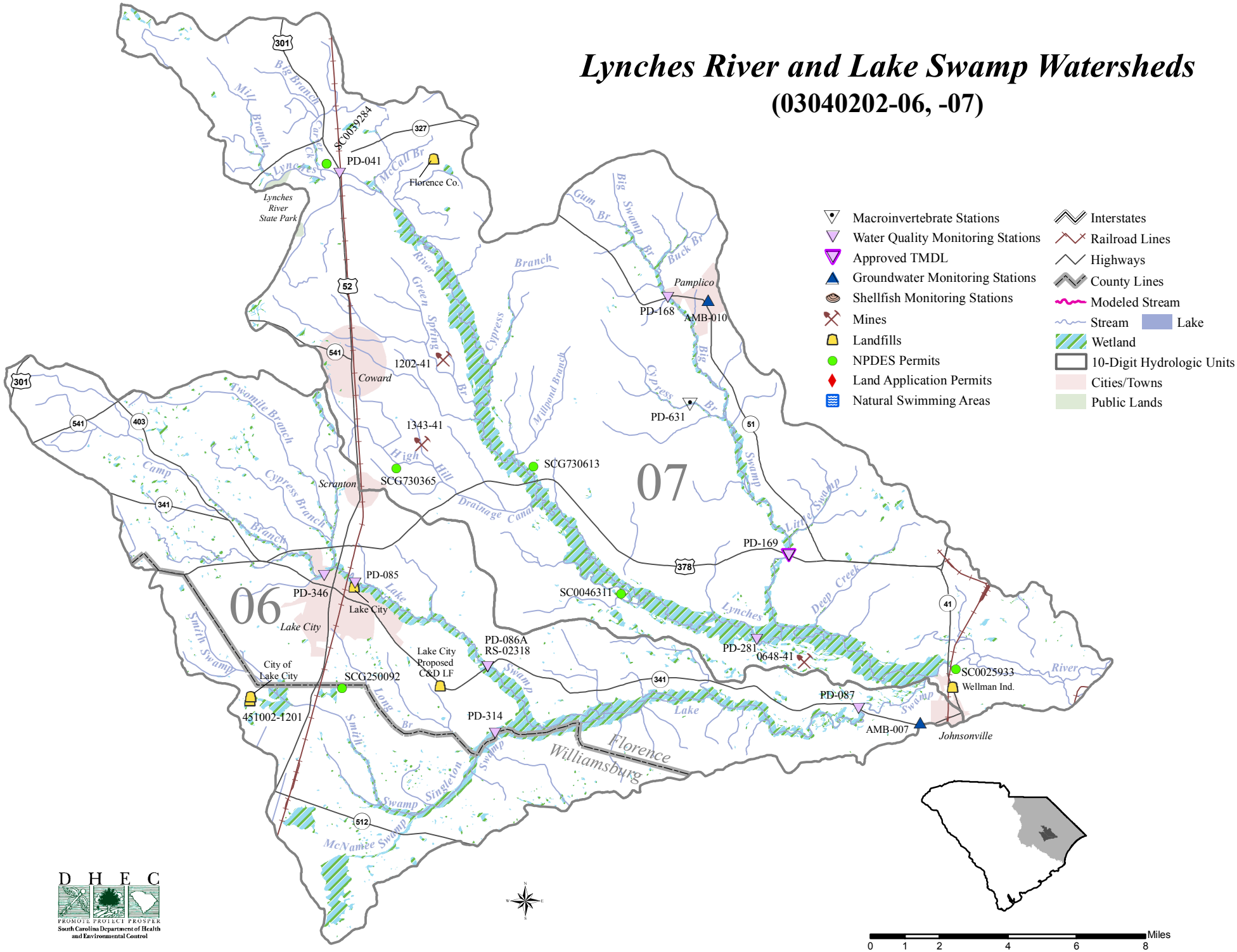
multi-county industrial park, making this a prime industrial growth corridor in the region. The Florence County Industrial Park at Lake City and the expanded water and sewer capacity of the City of Lake City should also encourage industrial growth. A rail line parallels the road corridor between Lake City and Florence. There are no plans to widen U.S. Hwy. 378, but it is a major beach access highway. Additional commercial development is possible along U.S. Hwy. 52 and at the U.S. Hwy. 52/U.S. Hwy. 378 intersection.

## *Watershed Protection and Restoration Strategies*

### *Special Projects*

**Fecal Coliform Bacteria TMDL Development and Implementation and Dissolved Oxygen Characterization for the Big Swamp and Singleton Swamp Watersheds**

The Santee-Wateree Resource Conservation and Development Council (RC&D), along with the Williamsburg and Florence Soil and Water Conservation Districts, Williamsburg and Florence Natural Resource Conservation Services, and the Department of Natural Resources have developed and are implementing a fecal coliform bacteria TMDL for the Big Swamp and Singleton Swamp watersheds. The TMDL addresses fecal coliform excursions at SCDHEC water quality monitoring station PD-169. The RC&D and its cooperators used their local knowledge to assist a contractor with the development of a TMDL and the identification of potential pollution sources that negatively effect dissolved oxygen levels within the watershed. Following TMDL approval, project cooperators implemented a series of best management practices (BMPs) in cooperation with local homeowners. These BMPs were designed to reduce the loading of fecal coliform bacteria into the respective watersheds. Along with repairing failing septic tanks in the area, RC&D focused their attention on local ‘Hobby Farms”. These are places where a landowner may have several animals that are not utilized as income in a traditional farming or animal agriculture sense. RC&D identified cattle, horses, goats, donkeys, llamas, and even camels in the watershed. In cooperation with these landowners BMPs, including fencing, watering wells, heavy use protection areas, and filter strips were implemented to prevent these animals and their waste from accessing local streams. Through these BMPs and the upgrade of the Town of Pamplico wastewater treatment facility, SCDHEC hopes to begin seeing significant reductions of fecal coliform and increases in dissolved oxygen throughout the watersheds.


Lynches River and Lake Swamp Watersheds
(03040202-06, -07)
Macroinvertebrate Stations
Water Quality Monitoring Stations
Approved TMDL
Groundwater Monitoring Stations
Shellfish Monitoring Stations
Mines
Landfills
NPDES Permits
Land Application Permits
Natural Swimming Areas
Interstates
Railroad Lines
Highways
County Lines
Modeled Stream
Stream
Lake
Wetland
10-Digit Hydrologic Units
Cities/Towns
Public Lands
07
06
PD-041
SC0039284
Florence Co.
Lynches River State Park
PD-168
AMB-010
Pamplico
PD-631
1202-41
1343-41
SCG730613
SCG730365
Scranton
Coward
PD-085
PD-346
Lake City
SC0046311
PD-169
PD-281
0648-41
SC0025933
Wellman Ind.
Johnsonville
PD-086A
RS-02318
Lake City Proposed C&D LF
City of Lake City
SCG250092
451002-1201
PD-314
PD-087
AMB-007
Florence
Williamsburg
Twomile Branch
Cypress Branch
Camp Branch
Smith Swamp
Long Br
Singleton Swamp
McNamee Swamp
Millpond Branch
High Hill Drainage Canal
Gum Br
Big Swamp Br
Buck Br
Cypress Br
Big Cypress Swamp
Little Swamp
Deep Creek
Lynches River
Lake Swamp
Lake Swamp
Mill Branch
Big Branch
McCall Br
Green Spring Br
Lynches Cr
301
327
52
541
403
341
51
378
41
512
Miles
0
1
2
4
6
8
DHEC
PROMOTE PROTECT PROSPER
South Carolina Department of Health and Environmental Control